CLAIMS:

1.   A bandwidth manager for controlling bandwidth resources in an ethernet
network having a plurality of nodes, selected pairs of nodes being separated by links
5   of predetermined link bandwidth capacities, the ethernet network having a plurality of
paths connecting at least two of the plurality of nodes together, each of said plurality
of paths being composed of at least one link, said bandwidth manager comprising:
        means for receiving a bandwidth reservation request including a requested
bandwidth capacity, an origination point and a destination point;
10   means for storing available bandwidth capacity for each link in the ethernet
network; and
        means for reserving link bandwidth capacity on a selected one of the plurality
of paths based on said bandwidth reservation request and said available bandwidth
capacity for each link in the selected one of the plurality of paths.
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2.   The bandwidth manager of claim 1 wherein said means for reserving link
bandwidth capacity includes:
        means for consulting said means for storing to determine if the bandwidth
capacity available for all links in the selected one of the plurality of paths is greater
20   than the requested bandwidth capacity; and
        means for reserving bandwidth for the links of the selected one of the plurality
of paths if the bandwidth reservation request can be satisfied for all links in the
selected one of the plurality of paths.

25   3.   The bandwidth manager of claim 1 further including means for determining
the selected one of the plurality of paths based on the origination point and the
destination point in the bandwidth reservation request.

4.   A method of controlling bandwidth resources in an ethernet network having a
30   plurality of nodes, selected pairs of nodes being separated by links of predetermined
link bandwidth capacities, the ethernet network having a plurality of paths connecting
at least two of said plurality of nodes together, each of said plurality of paths being
composed of at least one link, said method comprising the steps of:

receiving a bandwidth reservation request including a requested bandwidth capacity, an origination point and a destination point;

storing available bandwidth capacity for each link in the ethernet network; and

reserving link bandwidth capacity on a selected one of the plurality of paths

5   based on said bandwidth reservation request and said available bandwidth capacity for each link in the selected one of the plurality of paths.

5.   The method of claim 4 wherein said step of reserving link bandwidth capacity includes the steps of:

10   consulting the stored bandwidth information to determine if the bandwidth capacity available for all links in the selected one of the plurality of paths is greater than the requested bandwidth capacity; and

reserving bandwidth for the links of the selected one of the plurality of paths if the bandwidth reservation request can be satisfied for all links in the selected one of

15   the plurality of paths.

6.   The method of claim 6 further including the step of determining the selected one of the plurality of paths based on the origination point and the destination point in the bandwidth reservation request.

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7.   A node on an ethernet network for controlling bandwidth resources, the ethernet network having a plurality of nodes, selected pairs of nodes being separated by links of predetermined link bandwidth capacities, a plurality of paths connecting at least two of the plurality of nodes, each of said plurality of paths being composed of

25   at least one link, said node comprising:

a receiver accepting a bandwidth reservation request including a requested bandwidth capacity, an origination point and a destination point;

a data store containing available bandwidth capacity for each link in the ethernet network; and

30   a request processor for reserving link capacity on a selected one of the plurality of paths based on said bandwidth reservation request and said available bandwidth capacity for each link of the chosen one of the plurality of paths.

8.   The node of claim 7 wherein said request processor includes:

a data store interface for accessing said data store to determine if the bandwidth capacity available for all links in the selected one of the plurality of paths is greater than the requested bandwidth capacity; and

5   a booking manager for reserving bandwidth for the links of the selected one of the plurality of paths if the bandwidth reservation request can be satisfied for all links in the selected one of the plurality of paths.

9.   The node of claim 7 further including a path choosing module for determining
10   the selected one of the plurality of paths based on the origination point and the destination point in the bandwidth reservation request.

10.   A computer readable medium having stored thereon computer executable instructions for controlling bandwidth resources in an ethernet network having a
15   plurality of nodes, selected pairs of said plurality of nodes being separated by links of predetermined link bandwidth capacity, the ethernet network having a plurality of paths connecting at least two of said plurality of nodes together, each of said plurality of paths being composed of at least one link, said computer executable instructions comprising the steps of:

20   receiving a bandwidth reservation request including a requested bandwidth capacity, an origination point and a destination point;

storing available bandwidth capacity for each link in the ethernet network; and

reserving link bandwidth capacity for a selected one of the plurality of paths based on said bandwidth reservation request and said available bandwidth capacity for
25   each link in the chosen one of the plurality of paths.

11.   The computer executable instructions of claim 10 wherein said step of reserving link bandwidth capacity includes the steps of:

consulting the stored bandwidth information to determine if the bandwidth
30   capacity available for all links in the selected one of the plurality of paths is greater than the requested bandwidth capacity; and

reserving bandwidth for the links of the selected one of the plurality of paths if the bandwidth reservation request can be satisfied for all links in the selected one of the plurality of paths .

5   12.   The computer executable instructions of claim 10 further including the step of determining the selected one of the plurality of paths based on the origination point and the destination point in the bandwidth reservation request.